

Application No.: 10/088,501  
Amendment Dated: December 9, 2003  
Reply to Office Action of: September 16, 2003

### **REMARKS**

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

The present invention as set forth in **amended Claim 1** relates to a **process for selectively removing COS with respect to CO<sub>2</sub> from a hydrocarbonaceous fluid stream** which contains CO<sub>2</sub> and COS, comprising:

intimately contacting the fluid stream in an absorption or extraction zone with a scrubbing liquor consisting of an aqueous amine solution containing from 1.5 to 5 mol/l of an aliphatic alkanolamine having of from 2 to 12 carbon atoms and **from 0.8 to 1.7 mol/l of at least one activator selected from the group consisting of piperazine, methyl piperazine and morpholine,**

removing the COS essentially completely from the fluid stream, and

separating the substantially COS-decontaminated fluid stream and the COS-loaded scrubbing liquor and discharging them from the absorption or extraction zone.

In contrast, Appl et al (4,336,233) discloses that COS is **partially** removed from gases (Appl et al, col. 2, lines 26-27). In order to achieve substantial removal of COS, it **must be converted** for example by hydrogenation or by hydrolysis into readily removable compounds, such as CO<sub>2</sub> and H<sub>2</sub>S, **before carrying out the process of Appl et al** (Appl et al, col. 2, lines 26-33). However, in the present invention, COS is **selectively** removed with respect to CO<sub>2</sub>. This is illustrated, for example, by Figure 5 of the present invention. Figure 5 is a diagram plotting the COS absorption rate as a function of the CO<sub>2</sub> absorption rate using a scrubbing

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liquor according to the present invention containing 2.77 mol/l of MDEA and 0.96 mol/l of piperazine. It can be seen that the dots are above the diagonal (which links the points of equal COS and CO<sub>2</sub> absorption). In other words, COS is selectively removed with respect to CO<sub>2</sub>. This is in contrast to Figure 4, in which the scrubbing liquor contains only 0.36 mol/l of piperazine and Figure 3, in which the scrubbing liquor contains only 0.1 mol/l of piperazine. Figure 4 shows substantially **unselective** COS and CO<sub>2</sub> removal. In Figure 3, a **substantial COS removal requires a virtually 100% removal of the CO<sub>2</sub>.**

Selective removal of COS with respect to CO<sub>2</sub> is not disclosed or suggested by Appl et al. Therefore, the rejection of Claims 1-6 under 35 U.S.C. §102(b) as anticipated by Appl et al (4,336,233) is believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of this rejection is respectfully requested.

The rejection of Claims 1-6 under 35 U.S.C. §112, 2<sup>nd</sup> paragraph, is obviated by the amendment of these Claims. However, with regard to Claim 1, Applicants note that the term "especially" is not contained in the claims as suggested by the Examiner. Thus, no correction is required.

The objection to the disclosure is obviated by the amendment of the specification. The trademark SELEXOL has been capitalized. The reference to the claims has been deleted from the specification. The appropriate headlines have been included. However, the trademark "aMDEA®" is properly identified in the specification. Please see the attached sheet showing that writing the trademark starting with a small "a" is correct. Accordingly, this rejection should be withdrawn.

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The objection to the abstract is obviated by the new abstract. A copy of the new abstract has been provided on a separate sheet, attached herewith.

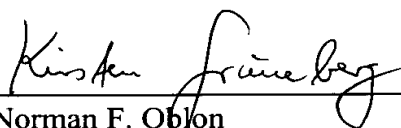
As requested by the Examiner, Applicants have cited the references mentioned in the specification in an **Information Disclosure Statement**. Applicants respectfully request that the Examiner acknowledge that the references cited in the Information Disclosure Statement, filed **herewith**, have been considered.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Customer Number  
**22850**

Respectfully submitted,

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